

# Pentagon Renovation Program

## THE PHOENIX PROJECT



<http://renovation.pentagon.mil>

It can't be done. It can't be done. It can't be done.

Done.

(28 days early)



Last October, following the attacks of September 11, the Pentagon set an aggressive goal. Employees would reoccupy the damaged areas of the building by September 11, 2002. Despite a top-notch management team and the best technical talent in the industry, few thought it possible.

But on August 15, 2002, a full 28 days early, members of the Marine Corps General Counsel to the Commandant, USMC Aviation and a Navy group moved into their offices in the Pentagon's outermost ring, the E-ring.

Bentley is proud to be a valued technology partner of the Pentagon Renovation Program and we salute the architects, engineers, construction workers and the entire rebuilding team on this remarkable and unprecedented achievement.





# The Pentagon - A Small City



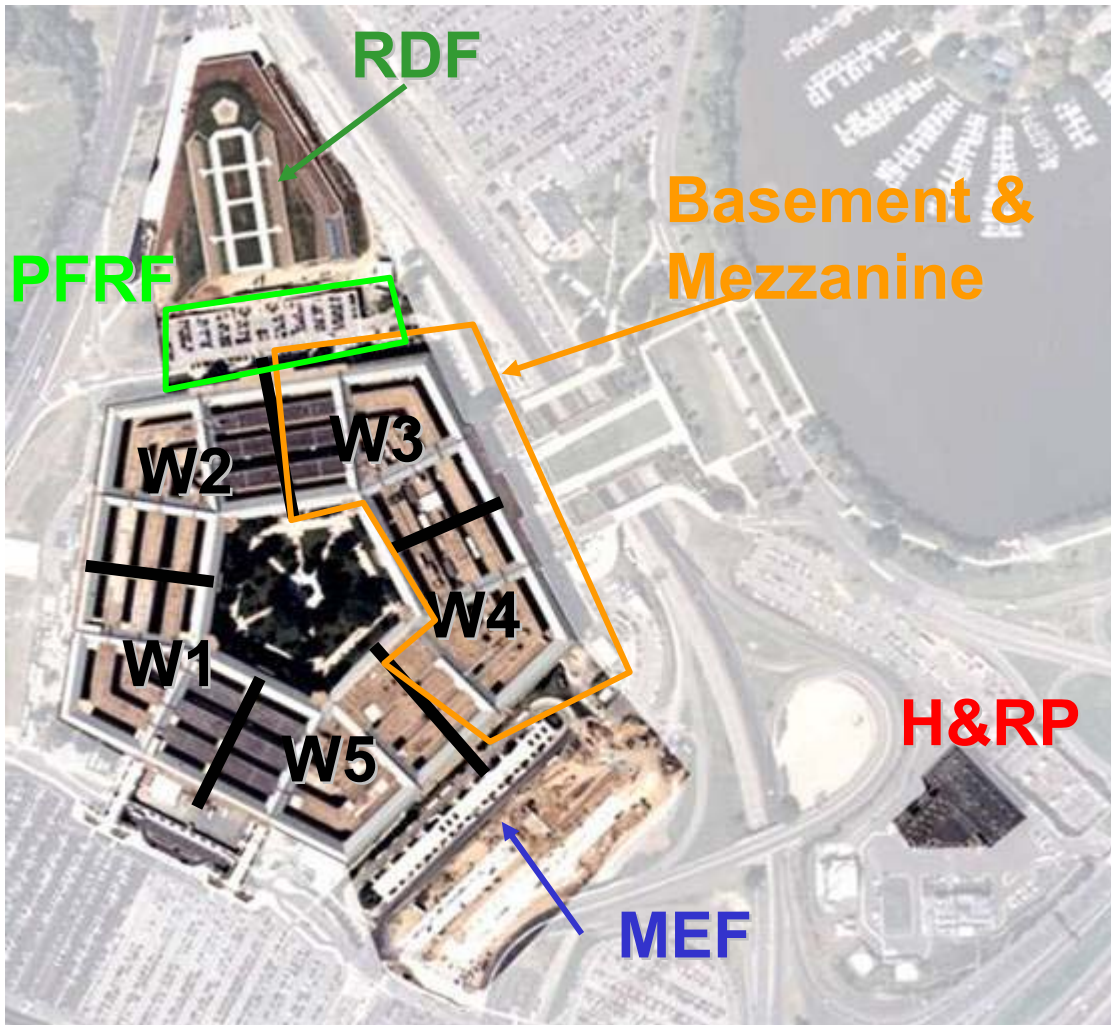
- 34 acres
- 6.5 million sq. ft.
- 3 Empire State Bldgs.
- 7,748 windows
- 17.5 miles of corridors
- 25,000 personnel
- 1,000,000 calls each day
- Police force
- Metro station
- Fire Station
- Health Facilities
- Post Office
- Mini-mall
- Heliport

Has never undergone a major renovation in its 60-year history.





# The Renovation Program



## RENOVATION PLAN

Heating and Refrigeration Plant  
(H&RP)

Basement and Mezzanine

Wedge 1

Wedge 2

Wedge 3

Wedge 4

Wedge 5

## OTHER PROJECTS

Remote Delivery Facility (RDF)

Metro Entrance Facility (MEF)

Physical Fitness & Readiness  
Facility  
(PFRF)



•Replacement of Exterior  
High Pressure Water Lines

•Monitoring & Control  
Systems  
•Building Operations  
Command Center

•Fire Sprinklers  
•ADA and Building Code  
Compliance

•Automated Smoke Doors



Structural steel, running through all five floors, strengthens the walls around the blast resistant window units on the E and A-rings. A geo-technical mesh is stretched between the steel tubes to prevent debris from becoming shrapnel in the event of an external explosion.





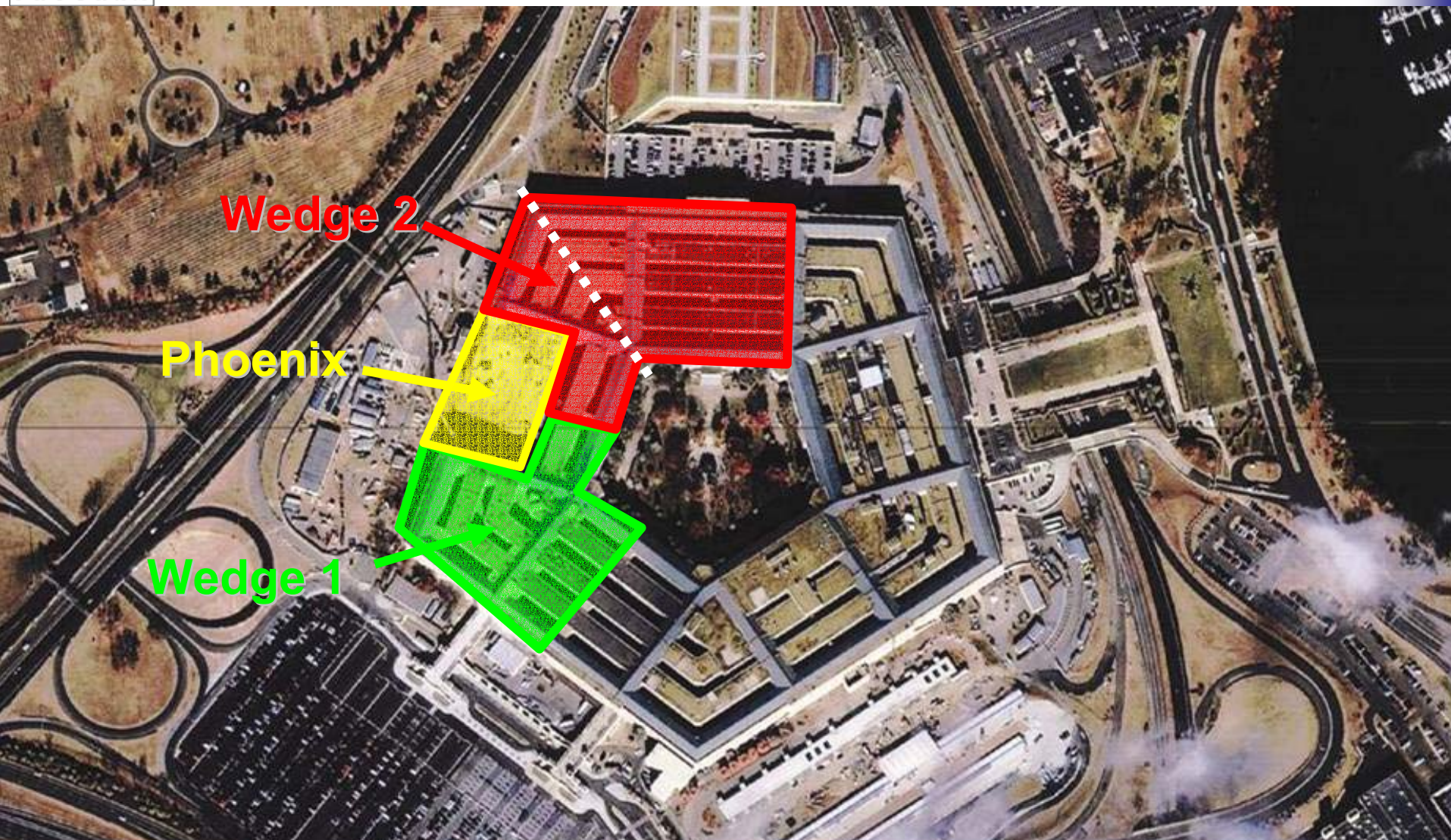








# Recovery & Renovation Projects



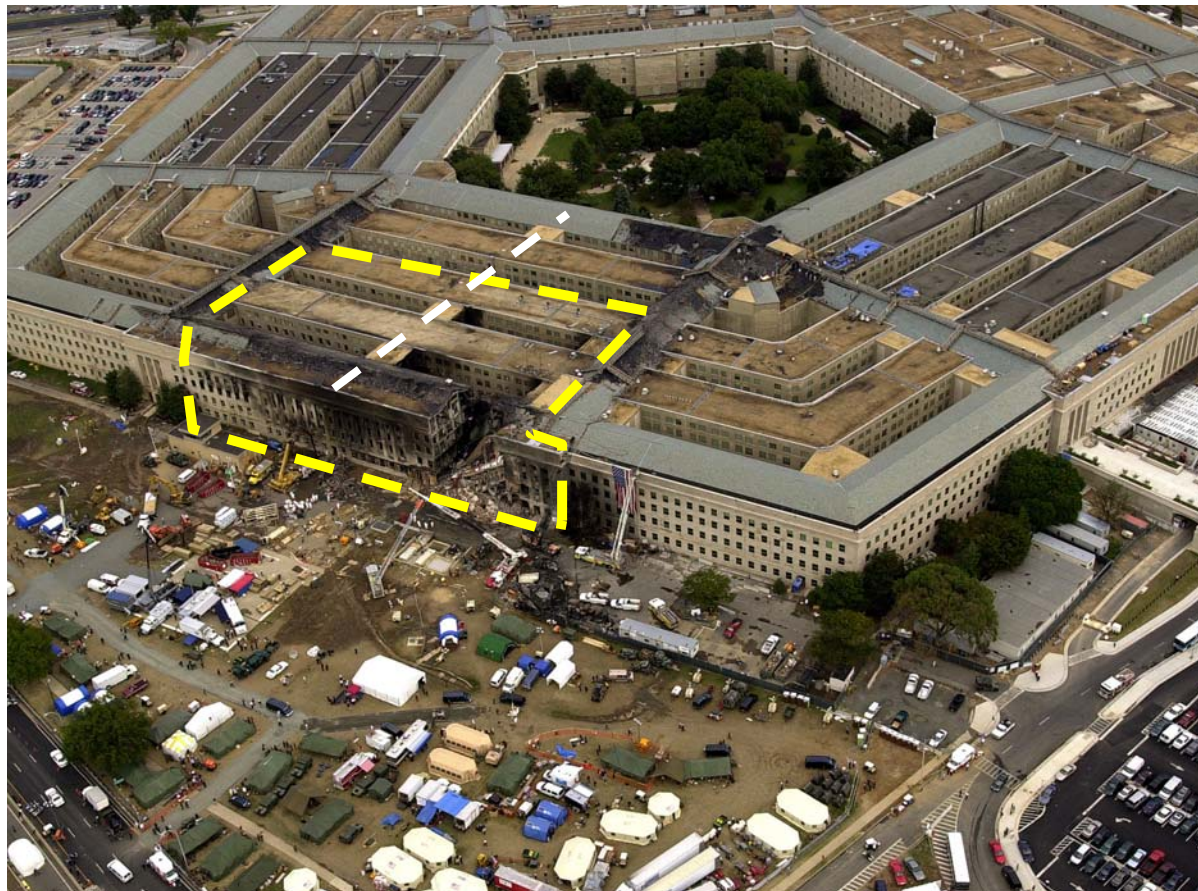




# The Phoenix Project

## Stabilize, Demolish, Rebuild Structure

Note: Wedge 1 side = Core & Shell, Wedge 2 side = Shell only







NO PARKING

Punch  
OUT

















NOVEMBER 5, 2001







NOVEMBER 27, 2001



**Third Floor slab nearing completion  
February 13, 2002**







## Topping Out Ceremony April 5, 2002







**June 11, 2002**

# **Completion of the limestone facade**







# 9/11/01 – 9/11/02







# 9/11/01 – 9/11/02















# Force Protection Improvements

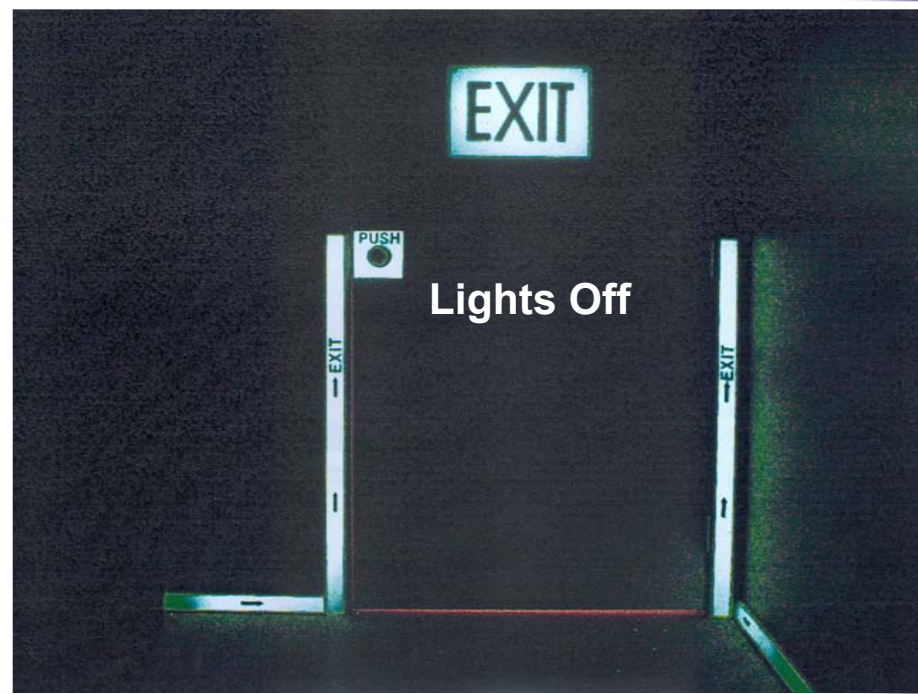
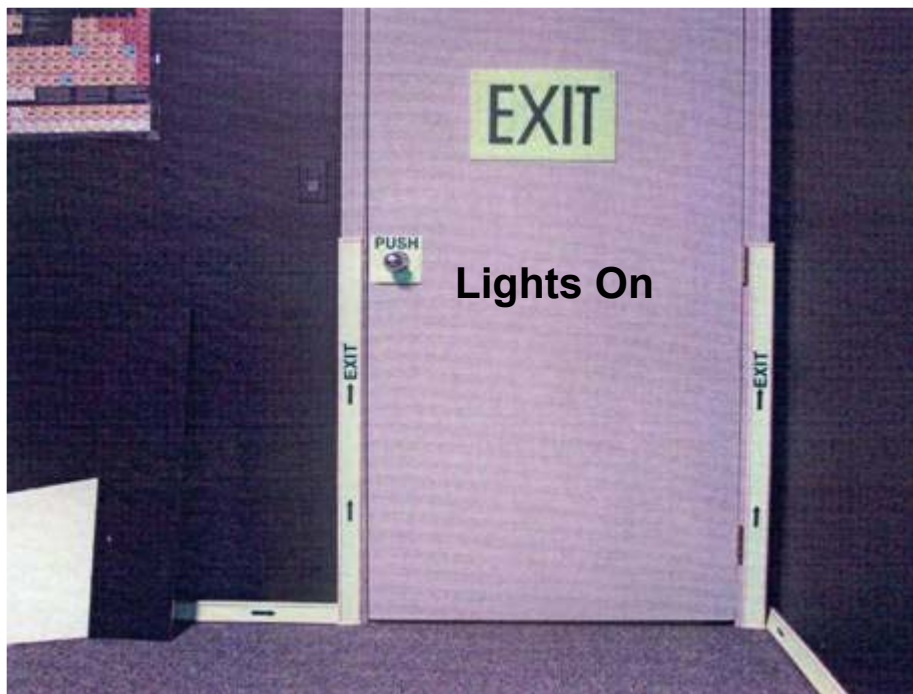


**CMU Walls**





# Force Protection Improvements



**Photoluminescent Signage**





# Force Protection Improvements



**Additional Stand Pipes**





# Force Protection Improvements



## Roads and Grounds Enhancements





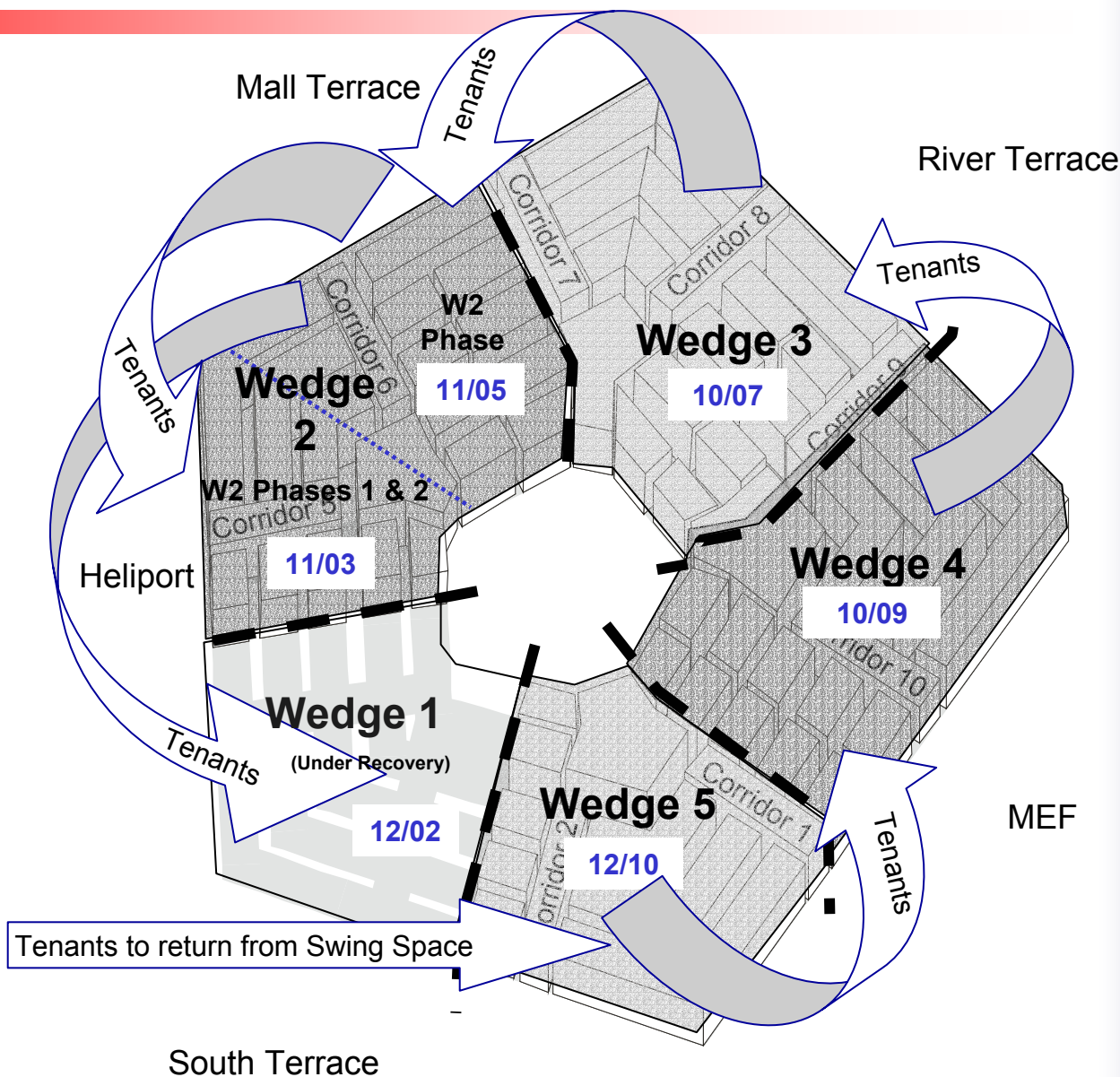
# Jump Start the Renovation Wedge Orientation for 2010 Completion

Congressional appropriation to accelerate the renovation.

H.R. 3338-71

Sec. 305

“...the amount of \$300,000,000 is transferred to the Pentagon Reservation Maintenance Revolving Fund only to finance accelerated building renovation activities for military command centers...by up to 4 years.”







# How We Reduced the Schedule

- Reduced Demolition & Abatement
- Reduced Core & Shell Construction
- Reduced Tenant Fit-out Construction
- Reduced IM&T Installation
- Reduced Furniture, Fixtures & Equip Installation

## Wedge1

2 Yrs.

1.5 Yrs.

1 Yrs.

1 Yrs.

9 Mos.



## Phoenix

1 Mo.

5 Mos.

6 Mo.

5 Mo.

3 Mo.

## SUCCESS BASED ON:

- Coordination with stake holders
- Motivation
- Incentives
- Clear goals
- Teamwork



# *Pentagon Renovation Program*

## On Cost, On Schedule, Built for the Next 50 Years

***<http://renovation.pentagon.mil>***

